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Proposed Maximum Residue Limit PMRL2016-11

# Abamectin

*(publié aussi en français)*

**4 April 2016**

This document is published by the Health Canada Pest Management Regulatory Agency. For further information, please contact:

Publications
Pest Management Regulatory Agency
Health Canada
2720 Riverside Drive
A.L. 6607 D
Ottawa, Ontario K1A 0K9

Internet: pmra.publications@hc-sc.gc.ca
healthcanada.gc.ca/pmra
Facsimile: 613-736-3758
Information Service:
1-800-267-6315 or 613-736-3799
pmra.infoserv@hc-sc.gc.ca

Canada

ISSN: 1925-0835 (print)
1925-0843 (online)

Catalogue number: H113-24/2016-11E (print version)
H113-24/2016-11E-PDF (PDF version)

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Under the authority of the *Pest Control Products Act*, Health Canada's Pest Management Regulatory Agency (PMRA) is proposing to establish maximum residue limits (MRLs) for abamectin on various commodities to permit the import and sale of foods containing such residues.

Abamectin is an insecticide currently registered in Canada for use on several crops, including greenhouse food crops and terrestrial food crops.

The PMRA must determine the quantity of residues that are likely to remain in or on the imported food commodities when abamectin is used according to label directions in the exporting country, and that such residues will not be a concern to human health. This quantity is then legally established as an MRL on the corresponding imported commodity. An MRL applies to the identified raw agricultural food commodity as well as to any processed food product that contains it, except where separate MRLs are specified for the raw agricultural commodity and a processed product made from it.

Consultation on the proposed MRLs for abamectin is being conducted via this document (see Next Steps, the last section of this document). A summary of the field trial data used to support the proposed MRLs can be found in Appendix I.

To comply with Canada's international trade obligations, consultation on the proposed MRLs are also being conducted internationally by notifying the World Trade Organization, as coordinated by Canada's Notification Authority and Enquiry Point.

The proposed MRLs, to replace or be added to the MRLs already established for abamectin, are as follows.

**Table 1 Proposed Maximum Residue Limits for Abamectin**

| Common Name | Residue Definition | MRL (ppm)[1] | Food Commodity |
|---|---|---|---|
| Abamectin | avermectin $B_1$ (a mixture of avermectins containing greater than or equal to 80% avermectin $B_{1a}$ (5-*O*-demethyl avermectin $A_{1a}$) and less than or equal to 20% avermectin $B_{1b}$ (5-*O*-demethyl-25-de(1-methylpropyl)-25-(1-methylethyl) avermectin $A_{1a}$) and its delta-8,9-isomer) | 0.1 | Leafy vegetables (Crop Group 4)[2], citrus oil |
| | | 0.09 | Stone fruits (Crop Group 12) |
| | | 0.05 | Celeriac roots, celeriac tops |
| | | 0.03 | Herbs (Crop Subgroup 19A, except chives), papayas |

| Common Name | Residue Definition | MRL (ppm)[1] | Food Commodity |
|---|---|---|---|
| | | 0.02 | Avocados, citrus fruits (Crop Group 10)[3], fruiting vegetables (Crop Group 8)[4], undelinted cotton seeds |
| | | 0.01 | Cucurbit vegetables (Crop Group 9)[5], peppermint tops, pistachios, spearmint tops, tree nuts (Crop Group 14)[6], tuberous and corm vegetables (Crop Subgroup 1C)[7] |

[1] ppm = parts per million
[2] Proposed to replace the currently established MRLs of 0.05 ppm in/on head lettuce and celery.
[3] There is currently a MRL of 0.02 ppm established for residues of abamectin in/on "citrus fruits" and no new MRLs for this crop group are being recommended. Theestablished MRL of 0.02 ppm for "citrus fruits" will be replaced by specific MRLs of 0.02 ppm for each commodity listed under Crop Group 10 –Citrus Fruits (DIR98-02) to reflect the current terminology for these commodities.
[4] Proposed to replace the currently established MRLs of 0.01 ppm in/on tomatoes and peppers.
[5] Proposed to replace the currently established MRL of 0.005 ppm in/on cucumbers.
[6] Proposed to replace the currently established MRLs of 0.005 ppm in/on almond nuts, Black walnuts and English walnuts.
[7] A MRL of 0.01 ppm is currently established on potatoes which is a commodity included in this subgroup.

MRLs are proposed for each commodity included in the listed crop groupings in accordance with the Residue Chemistry Crop Groups webpage in the Pesticides and Pest Management section of Health Canada's website.

MRLs established in Canada may be found using the Maximum Residue Limit Database on the Maximum Residue Limits for Pesticides webpage. The database allows users to search for established MRLs, regulated under the *Pest Control Products Act*, both for pesticides or for food commodities.

**International Situation and Trade Implications**

Table 2 compares the MRLs proposed for abamectin in Canada with corresponding American tolerances and Codex MRLs.[1] American tolerances are listed in the Electronic Code of Federal Regulations, 40 CFR Part 180, by pesticide. A listing of established Codex MRLs is available on the Codex Alimentarius Pesticide Residues in Food website, by pesticide or commodity.

**Table 2 Comparison of Canadian MRLs, American Tolerances and Codex MRLs (where different)**

| Food Commodity | Canadian MRL (ppm) | American Tolerance (ppm) | Codex MRL (ppm) |
|---|---|---|---|
| Avocados | 0.02 | 0.02 | Not established |
| Celeriac roots, Celeriac tops | 0.05 | 0.05 | Not established |
| Citrus Fruits (Crop Group 10) | 0.02 | 0.02 | 0.01 |
| Citrus oil | 0.1 | 0.1 | Not established |
| Cucurbit Vegetables (Crop Group 9) | 0.01 | 0.005 | 0.01 (cucumber, melons, summer squash) |
| Fruiting Vegetables (Crop Group 8) | 0.02 | 0.02 | 0.02 (peppers, sweet (including pimento); tomato)<br>0.2 (peppers, chili, dried) |
| Herbs (Crop Subgroup 19A, except Chives) | 0.03 | 0.03 | Not established |
| Leafy Vegetables (Crop Group 4) | 0.1 | 0.1 | 0.05 (lettuce, leaf) |
| Papayas | 0.03 | Not established | Not established |

[1] The Codex Alimentarius Commission is an international organization under the auspices of the United Nations that develops international food standards, including MRLs.

| Food Commodity | Canadian MRL (ppm) | American Tolerance (ppm) | Codex MRL (ppm) |
|---|---|---|---|
| Peppermint tops, Spearmint tops | 0.01 | 0.01 | Not established |
| Stone Fruits (Crop Group 12) | 0.09 | 0.09 | Not established |
| Tree Nuts (Crop Group 14), Pistachios | 0.01 | 0.01 | 0.01 (almonds, walnuts) |
| Tuberous and Corm Vegetables (Crop Subgroup 1C) | 0.01 | 0.01 | 0.01 (potato) |
| Undelinted cotton seeds | 0.02 | 0.02 | 0.01 (cotton seed) |

**Next Steps**

The PMRA invites the public to submit written comments on the proposed MRLs for abamectin up to 75 days from the date of publication of this document. Please forward your comments to Publications (see the contact information on the cover page of this document). The PMRA will consider all comments received before making a final decision on the proposed MRLs. Comments received will be addressed in a separate document linked to this PMRL. The established MRLs will be legally in effect as of the date that they are entered into the Maximum Residue Limit Database.

# Appendix I

## Summary of Field Trial Data Used to Support the Proposed Maximum Residue Limits

Residue data for abamectin in papaya, avocado, celeriac, basil, cotton, mint, stone fruits, leafy vegetables, fruiting vegetables, cucurbit vegetables, and citrus fruits were submitted to support the maximum residue limits on various imported commodities. In addition, previously reviewed residue data from field trials conducted in/on citrus fruits, leafy vegetables, strawberries, fruiting vegetables, tree nuts, potatoes, grapes, and hops were reassessed in the framework of this petition. In addition, processing studies in treated dried prunes; mint oil; cottonseed hulls, meal, and refined oil; tomato paste and puree, and citrus fruit oil were reviewed or reassessed to determine the potential for concentration of residues of abamectin into processed commodities.

## Maximum Residue Limits

The recommendation for maximum residue limits (MRLs) for abamectin was based upon the residues observed in crop commodities treated according to label directions in the exporting country, and the guidance provided in the OECD MRL Calculator. Table A1 summarizes the residue data used to calculate the proposed MRLs for all imported commodities.

**Table A1 Summary of Field Trial and Processing Data Used to Support MRLs**

| Commodity | Application Method/ Total Application Rate (g a.i./ha)[1] | Preharvest Interval (days) | Lowest Average Field Trial Residues (ppm) | Highest Average Field Trial Residues (ppm) | Experimental Processing Factor |
|---|---|---|---|---|---|
| Papayas | Foliar/ 89.2 – 93.0 | 14 | 0.0061 | 0.0083 | n/a |
| Avocado | Foliar/ 52.5 – 54.9 | 14 | <0.004 | <0.009 | n/a |
| Spearmint tops and Peppermint tops | Foliar/ 63.9 | 28 | <0.004 | <0.009 | 0.14x (mint oil) |
| Undelinted cotton seeds | Foliar/ 42.6 – 43.7 | 19 – 20 | <0.006 | <0.014 | 0.6x (refined oil) |
| Fresh basil leaves | Foliar/ 66.8 – 67.1 | 13 – 14 | <0.005 | <0.010 | n/a |
| Dried basil leaves | Foliar/ 66.8 | 13 | <0.026 | <0.026 | n/a |

| Commodity | Application Method/ Total Application Rate (g a.i./ha)[1] | Preharvest Interval (days) | Lowest Average Field Trial Residues (ppm) | Highest Average Field Trial Residues (ppm) | Experimental Processing Factor |
|---|---|---|---|---|---|
| Potatoes | Foliar/ 64 – 672 | 14 – 15 | <0.004 | <0.010 | No quantifiable residues in the RAC at exaggerated rates. |
| Sweet cherries | Foliar/ 52.4 | 21 | <0.006 | <0.019 | n/a |
| Tart cherries | Foliar/ 52.4 | 21 | <0.008 | 0.053 | n/a |
| Peaches | Foliar/ 52.4 | 21 – 22 | <0.004 | 0.026 | n/a |
| Plums | Foliar/ 53.8 | 21 | <0.004 | <0.006 | 1.9x (dried prunes) |
| Almonds | Foliar/ 81 | 21 | <0.01 | <0.01 | n/a |
| Pecans | Foliar/ 81 | 21 | <0.01 | <0.01 | n/a |
| Oranges | Foliar/ 51.1 – 54.4 | 7 | <0.004 | <0.007 | 7x (citrus oil) |
| Grapefruit | Foliar/ 51.1 – 53.4 | 6 – 7 | <0.004 | <0.006 | |
| Lemons | Foliar/ 51.5 – 53.1 | 7 | <0.004 | <0.008 | |
| Head lettuce w/ wrapper leaves | Foliar/ 61.7 – 65.3 | 5 – 7 | <0.004 | <0.010 | n/a |
| Leaf Lettuce | Foliar/ 61.8 – 64.9 | 6 – 7 | <0.007 | <0.034 | n/a |
| Celery | Foliar/ 63.6 – 66.0 | 7 | <0.006 | <0.018 | n/a |
| Spinach | Foliar/ 64.1 – 65.8 | 7 | <0.004 | 0.052 | n/a |
| Tomatoes (standard size and cherry tomatoes) | Foliar/ 62.0 – 64.9 | 7 | <0.006 | <0.008 | 1.00x (paste) 0.63x (puree) |
| Bell peppers | Foliar/ 63.3 – 65.6 | 7 | <0.006 | <0.012 | n/a |
| Nonbell peppers | Foliar/ 61.9 – 64.5 | 7 | <0.006 | <0.010 | n/a |

| Commodity | Application Method/ Total Application Rate (g a.i./ha)[1] | Preharvest Interval (days) | Lowest Average Field Trial Residues (ppm) | Highest Average Field Trial Residues (ppm) | Experimental Processing Factor |
|---|---|---|---|---|---|
| Cantaloupe | Foliar/ 63.5 – 110.9 | 7 | <0.006 | <0.010 | n/a |
| Cucumber | Foliar/ 63.5 – 97.4 | 6 – 7 | <0.006 | <0.010 | n/a |
| Summer Squash | Foliar/ 63.6 – 88.5 | 6 – 7 | <0.006 | <0.010 | n/a |
| Celeriac roots | Foliar/ 66.0 – 66.1 | 7 | <0.004 | <0.004 | n/a |
| Celeriac tops | Foliar/ 66.0 – 66.1 | 7 | <0.007 | <0.016 | n/a |

[1] g a.i./ha = grams of active ingredient per hectare

Following the review of all available data, MRLs as proposed in Table 1 are recommended to cover residues of abamectin. Residues of abamectin in these imported crop commodities at the proposed MRLs will not pose an unacceptable risk to any segment of the population, including infants, children, adults and seniors.